

**ABSTRACT OF THE DISCLOSURE**

In one embodiment, an optical device includes a polarization diversity module configured to receive an optical input signal and output a first optical output signal and a second optical output signal having the same polarization state. This helps ensure light  
5 beams propagating in the optical device have the same polarization state, thereby mitigating the effects of polarization-dependent loss in the optical device. In one embodiment, the optical device comprises an optical dynamic gain equalizer with a light modulator.